**Commonwealth of Kentucky**
**Division for Air Quality**

# *PERMIT STATEMENT OF BASIS*

(DRAFT)
Title V, Operating
Permit: V-06-048
Pella Corporation - Murray Operations
Murray, KY 42071
April 18, 2007
Rick Shewekah, Reviewer

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| SOURCE ID: | 21-035-00045 |
| SOURCE A.I. #: | 40564 |
| ACTIVITY ID: | APE20060002 |

**SOURCE DESCRIPTION:**

Pella Corporation – Murray Operations manufactures plastic windows and window frames. The plant consists of the Pultusion Plant and the Vinyl Plant. The Pultrusion Plant includes Pellamat construction, twenty-two (22) pultruders, chop saw operations, conductive and powder coating, and eleven (11) insulated glass (IG) assembly lines. The Vinyl Plant includes chop saw operations, and eleven (11) IG assembly lines. Glass cleaning systems using isopropyl alcohol have been replaced with cleaning systems which utilize only water as the cleaning solution (i.e., no VOC). Therefore, these emission units, formerly emission points 05 and 09, are no longer included in the permit.

To preclude the applicability of 401 KAR 52:020, *Title V Permits*, and 40 CFR 63, Subpart WWWW, *National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production*, the source was issued a Conditional Major Permit, Permit F-02-022, by the Division on November 25, 2002. To increase operational flexibility, the source has requested that the existing Conditional Major permit be transitioned to a first-issue Title V operating permit. The potential to emit of a hazardous air pollutant (HAP), styrene, is greater than 10 tons per year. Therefore, the source is a major source and is subject to the provisions of 401 KAR 52:020. This is the initial Title V operating permit for this source.

## PULTRUSION PLANT

**EP 01(01)** **Pultrusion molding process – Twenty-two (22) pultruders**
Description: Converts styrene resin into rigid fiberglass parts (lineal) for windows and doors
Maximum resin usage: 2,549 lb/hr
Control Device: Direct die and perform injection system

**EP 11(11)** **Styrene resin bulk storage tank**
Description: Storage of styrene resin
Tank Capacity: 6000 gallons
Control Device: None

**EP 12(12)** **Styrene resin mixing storage tank**
Description: Storage and mixing of styrene resin
Tank Capacity: 70 gallons
Control Device: None

**EP 02(02)** **Pultrusion Plant Chop Saws Operations**
Description: Chop saws, miter saws, and routers, with EP 08, total up to 240 units.
Control Device: Exhaust from each saw or router is filtered through a fabric filter to collect sawdust with air returned into the plant. Drills and equipment not generating airborne particulate are not controlled.
Control Efficiency: 50% for PM10 and 99% for Particulate Matter

**EP 14(14)** **Paint Hanger Cleaning System**
Description: Refurbishes metal tools, parts and fixtures by removing organic based material such as paint, powder coat, and plastic, utilizing thermal and mechanical cleaning
Maximum Capacity: 1,058 lbs/batch
Fuel: Natural Gas
Fuel Input: 951,000 BTU/hr
Control Device: Cyclone
Control Efficiency: 60%

## VINYL PLANT

**EP 08(08)** **Vinyl Plant Chop Saws Operations**
Description: Chop saws, miter saws, and routers, with EP 02, totals up to 240 units.
Control Device: Exhaust from each saw or router is filtered through a fabric filter to collect sawdust with air returned into the plant. Drills and equipment not generating airborne particulate are not controlled.
Control Efficiency: 50% for PM10 and 99% for Particulate Matter

## INSIGNIFICANT ACTIVITIES

All of the insignificant activities are included in Section C of permit V-06-048.

**COMMENTS:**

(1) **Type of control and efficiency**

The production of lineals is subject 40 CFR 63, Subpart WWWW. The permittee is required to comply with applicable work practice standards as specified in the permit. There is no add-on control to be installed for the pultrusion process, however the pultrusion process utilizes perform injection or direct die injection. This has the effect of controlling organic HAP (styrene) emissions by 90 percent (40 CFR 63.5830(e)(2)).

The Paint Hanger Cleaning System utilizes a cyclone for particulate removal, with an estimated 60% control efficiency. Each saw or router in the Chop Saw Operations utilizes a fabric filter, with air returned into the plant. The control efficiency is 50% for PM10 and 99% for Particulate Matter.

(2) **Emission factors and their source**

Emissions were estimated using a combination of raw material usage rates, material balance, and engineering estimates, as provided by the permittee. The pultrusion process emissions were estimated from an EPA emission factor of 10.7%, in Table 1 to 40 CFR 63 Subpart WWWW and from the Technical Discussion of the Unified Emission Factors for Open Molding of Composites, Table 3, for nonatomized mechanical resin application. This application process most closely resembles pultrusion. This factor is a conservative estimate, since this emission factor was developed from open molding techniques, and not a closed process as is used for the pultrusion process. Natural gas combustion emissions were estimated using emission factors from AP-42. The U.S. EPA TANKS program was utilized to estimate the emissions from the mixing tank and the bulk storage tank, with results provided by the permittee.

(3) **Applicable Regulations**

(a) 401 KAR 59:010, *New Process Operations*, applies to each affected facility not subject to another emission standard for particulate matter (PM) in Chapter 59 of 401 KAR commenced on or after July 2, 1975. This rule applies to EP 02, 08 and 16. Visible emissions shall not exceed 20% opacity. Emissions of PM shall not exceed 2.34 lbs/hr.

(b) 401 KAR 63:002, Sections 2 and 3(1)(a), which incorporates by reference 40 CFR 63 Subpart A, *General Provisions*, is incorporated by reference in 40 CFR 63, Subpart WWWW.

(c) 401 KAR 63:002, Sections (2) and (3)(1)(cccc), which incorporates by reference 40 CFR 63 Subpart WWWW, *National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production*, applies to reinforced plastic composites production facilities.

Conditional Major Permit No. F-02-022, issued to this source on November 25, 2002, restricted single and total HAP emissions to less than 10 and 25 tons per year, respectively, such that the requirements of Subpart WWWW would not apply. The applicant has requested the removal of these emission limitations. The removal of the HAP emission limitations results in both a transition from the Conditional Major permit to this Title V operating permit, and the applicability of 40 CFR 63, Subpart WWWW to this source. This rule is applicable to this facility since it utilizes pultrusion for the manufacture of composite materials (i.e., lineals). Pursuant to 40 CFR 63, Table 2, item 5, this source, which is a new facility that was an area source at startup but that will become a major source upon issuance of this permit, shall comply with the applicable standards immediately upon becoming a major source (i.e., upon issuance of this permit). All related requirements, including work practice standards, emission limits, monitoring, recordkeeping and reporting, as specified in Subpart WWWW, are incorporated into the permit.

(4) **Non-Applicable Regulations**

(a) 40 CFR 60 Subpart Kb - *Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23, 1984*, is not applicable to any of the styrene storage tanks because their capacities are less than the rule applicability threshold of 75 m3 (19,812.9 gallons).

(b) 40 CFR 60 Subpart IIII - *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, does not apply to the one (1) emergency generator, as an insignificant activity, since the unit was installed prior to July 11, 2005.

(c) 401 KAR 63:002, Sections (2) and (3)(1)(vvv), which incorporates by reference 40 CFR 63 Subpart PPPP – *National Emissions Standards for Hazardous Air Pollutants for Surface Coating of Plastic Parts and Products*, does not apply to EP 06 or 10 since these production materials do not contain hazardous air pollutants. This regulation also does not apply to the powder coating operation, as an insignificant activity, as these coating materials do not contain hazardous air pollutants.

(d) 401 KAR 63:002, Sections (2) and (3)(1)(cccc), which incorporates by reference 40 CFR 63 Subpart WWWW – *National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production*, does not apply to EP 06 or 10 pursuant to 40 CFR 63.5785(a) since this activity is not part of reinforced plastic composites production.

(e) 401 KAR 63:002, Sections (2) and (3)(1)(ffff), which incorporates by reference 40 CFR 63 Subpart ZZZZ - *Stationary Reciprocating Internal Combustion Engines (RICE)*, does not apply since the one (1) emergency generator at this source has a site-rating of 400 hp, which is less than the rule applicability threshold of 500 brake horsepower.

(f) 40 CFR 64, *Compliance Assurance Monitoring*, applies to emission units which have potential pre-control emission greater than 100 percent of the applicable major Part 70 threshold and use a control device to achieve compliance with an emission limitation or standard, excluding emission units subject to a MACT standard. No pollutant specific emission units at the facility have potential pre-control device emissions of a regulated air pollutant equal or greater than 100 percent of the amount, in tons per year, required for unit to be classified as a major source. Furthermore, the pultrusion operations are subject to a MACT standard. 40 CFR 63 Subpart WWWW.

(g) 401 KAR 50:012, Section 1, *General Application of Administrative Regulations and Standards*. Pursuant to 401 KAR 50:012, Section 1(2), in the absence of a standard specified in these administrative regulations, all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical. The potential to emit of each criteria pollutant at the facility is less than 100 tpy, and the source is subject to 40 CFR 63, Subpart WWWW, which controls organic HAPs and VOC emissions.

(h) 401 KAR 59:015, *New Indirect Heat Exchangers*, does not apply to the curing and drying ovens, all as insignificant activities, because these units are not indirect heat exchangers.

**PERIODIC MONITORING:**

For compliance with 40 CFR 63 Subpart WWWW, *National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production*, resin use, organic HAP content, and operations where the resin is used shall be monitored and recorded. The permit also requires a record to be maintained for each of the pultrusion machines of all times that wet area enclosures doors or covers are open and there is resin present in the resin bath.

For the chop saw operations, the fabric filters shall be inspected daily for proper operation before the unit is operated for compliance with 401 KAR 59:010, *New Process Operations*. The permit also requires the fabric filters to be operated and maintained in accordance with manufacturers' specifications.

**CREDIBLE EVIDENCE:**

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.